Claims RE:10/086.226

[What is claimed is:]

1. A [high strength] stringed musical instrument neck, which [is constructed so that the tension from a plurality of strings acting upon it in singular plane is controlled and redirected by a monocoque] outer structure [as an opposing force to the tension imposed by the plurality of strings, and improved method of construction comprising:]

a length of hard wood [shaped as] the instruments neck; and

[two separate strengthening beams made from]graphite and epoxy resins[and, adhesively securing said beams to and within the wood; and]

[one external strengthening shell made from] carbon cloth and epoxy resins,[and adhesively securing said shell to the] wood and [both beams inclusive; and]

[a fingerboard adhesively secured. and]

[a two way truss rod assembly made from stainless steel being adjustable to facilitate upbow and backbow relative to the playing surface.]

2. [A high strength stringed musical instrument neck, wherein both strengthening beams are made from graphite] in [epoxy resins and one of which is] in the [form of a flat plate] and the [other is in the form of a rectangular rod and each having a generally flat bottom and top surface.]

3 [A high strength stringed musical instrument neck, wherein the external strengthening shell is made from a plurality of layers of] carbon cloth [cast] in epoxy resins [and formed upon a mold and the weave of said cloth is disposed at an angle of]45 degrees to the longitudinal axis of said [mold to form an external] truss structure [and having a semi-elliptical cross sectional shape.]

4. [A high strength stringed musical instrument neck comprising the steps of:

providing a structural length] of hard wood [shaped as the instruments neck; and

providing two graphite strengthening beams; and

machining the length of hard wood to accept the installation of said beams; and

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adhesively securing said beams; and

providing an external carbon fiber strengthening shell; and
adhesively securing said shell to the wood and both beams inclusive; and

providing a stainless steel two way truss rod assembly within the wood core, and

providing a fingerboard and adhesively securing it to the neck.]

March 11, 2004 These are currently amended claims.

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Canceled

CLAIMS

1. A method of constructing a musical instrument neck assembly, and central body portion having increased stiffness and stability, and having a headstock portion, and a central body portion, said neck assembly comprising; a sandwich integral structure made from graphite / carbon fiber, wood, and epoxy resins which extends completely along the length of the neck assembly into the headstock and body portions, said structure being of sufficient stiffness and strength to bear the load imposed on the assembly by a plurality of strings, and said structure comprising; a core of hardwood having a length extending completely along the neck and body assembly and headstock portion, a compression spar of unidirectional and bi-directional graphite in epoxy resins, a tension spar of unidirectional graphite cast in epoxy resins, an outer skin truss of bi-directional carbon fiber cloth at 45 ° to the longitudinal axis and epoxy resins, a string orbit relief control mechanism, and coated with a hard translucent ultra-violet protective finish.

2. The structure is designed so that load vectors acting upon it in a singular plain are controlled and redistributed into the said structure as opposing force to the original loads.

3. The method of claim two is the outer skin truss defined in claim one comprised of at least two layers of carbon fiber cloth in epoxy resins installed at 45 ° to the longitudinal axis of said structure, whereby opposing physical forces acting on the compression spar and the tension spar create a crush load in the region between the tension spar and the compression spar, these loads are redirected by said skin truss along the length of the 45 ° fibers as forces to oppose the original load placed upon the compression spar .

4. The method of claim three is a core of hardwood having adequate sheer strength and density to dispose the load from the outer skin truss at the juncture of the compression spar and said outer skin, and having sufficient strength to withstand the crush loads in the region between the compression spar and the tension spar.

Canceled 3-16-04